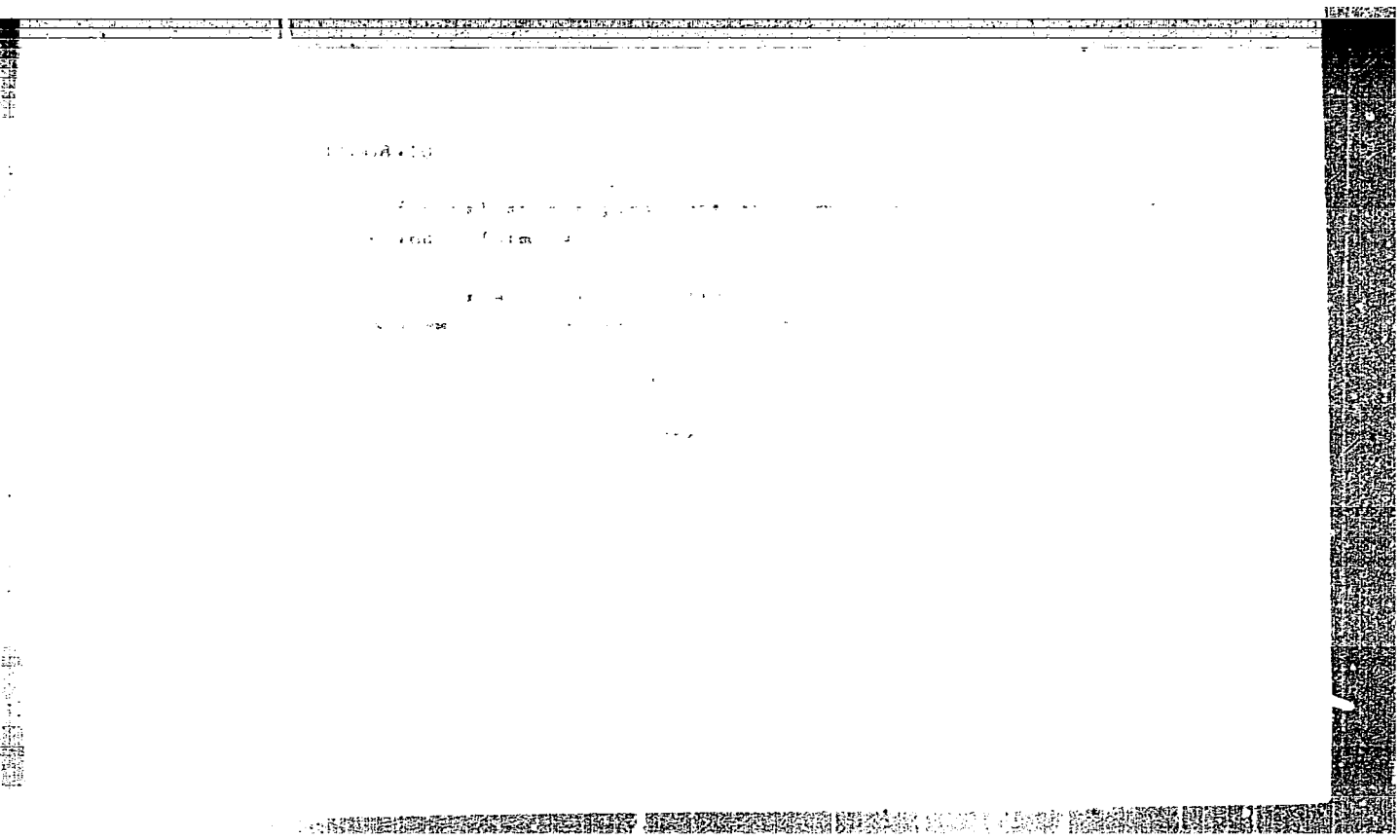

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SOV/81-59-5-17733

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Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 5, pp 560 - 561 (USSR)

AUTHORS: Biderman, V.L., Drozhzhin, P.Kh., Pugin, V.A., Shchaveleva, V.F.

TITLE: The Experimental Investigation of Deformations Occurring in Parts of the Tread in a Pneumatic Tire

PERIODICAL: Tr. N.-i. in-ta shin. prom.-sti, 1957, Nr 3, pp 5 - 15

ABSTRACT: A method is described for measuring the deformations (D) occurring in parts of the tire (T) and some of the results of a study of D in the internal and external layers of the tread are submitted, depending on the factors of its construction and its operation conditions. The measuring of D is performed with a tensometer, which is a thin steel ⊓-shaped cramp; wire transducers are pasted onto the horizontal plate from both sides. The fastening and insertion of the tensometer into the tread part, which is being measured, is accomplished by means of needles soldered onto the cramp with rubber disks, vulcanized onto it. A holder is also soldered onto the cramp for fastening the transducer

Card 1/5

The Experimental Investigation of Deformations Occurring in Parts of the Tread in a Pneumatic Tire

onto the tread. The transducer is fed by a direct current. The electrical signal from the tensometer is amplified and fed to an oscillograph. In order to get a horizontal deflection of the beam of the latter a special scanning device is installed, which is a potentiometer, the brush of which rotates together with the tire, whereby the deflection of the beam of the oscillograph is proportional to the angle of T rotation. D was measured at various velocities of the rolling up to 50 - 60 km/hr. When the tread is rolling along a smooth surface the zone of the D elements of T spreads to 1/3 of the T circumference. The curves of change of the meridional (profile) and circumferential D, in the internal as well as the external layers of the tread, have the shape of three extrema, in which case the circumferential and meridional D have different signs in all the points. In the meridional direction the maximum D take place at a distance of 110 - 120 mm from the crown and at the same distance in the circumferential direction, whereby the value of D reaches 5 - 6%. The threads of the cord near the crown are subjected to D of stretching. The value of D of the threads is 1.0 - 1.5% above the initial

The Experimental Investigation of Deformations Occurring in Parts of the Tread in a Pneumatic Tire

lengthening (2%), which depends on the internal pressure in T. On the side part the threads operate under compression, the greatest D (1.8 - 2.2%) of which occur in the cross-section located at 110 - 120 mm from the crown. D of the rubber in the layer (30 - 40%) are mainly shear D. Additional dynamic D of the threads of the cord along the crown practically do not depend on the internal pressure. Compression D of the threads on the side within a pressure range of 2 - 5 kg/cm^2 do not depend either on the internal pressure. With a drop in the pressure to < 2 kg/cm^2 the compression D increase. At a constant deflection the D of the rubber in the layer actually do not change due to internal pressure. The cord D along the crown do not depend on the deflection of T when the latter changes from 10 - 40 mm. With an increase in the deflection the compression D of the threads on the side increase. The shear D of the rubber in the layer also increase with an increase in the deflection. A change in the rolling velocity of T from 3 to 50 km/hr has no significant effect on the rubber and cord D. Pressing obstacles into T, D of the threads increase approximately in proportion to

The Experimental Investigation of Deformation Occurring in Parts of the Tread in a Pneumatic Tire

the magnitude of the impression and decrease with a drop of the internal pressure in T. With an increase in the number of layers of T, the thread and rubber D in the layers increase. A change in the cut angle of the chord threads (42, 52, 60°) has little effect on the cord thread D. When a concentrated load acts on T, an increase in the angle of the thread causes some increase in their D. With an increase in the thread angle from 42 to 60° the rigidity of the carcass in the circumferential direction increases, and in the meridional direction decreases, whereby the D of the layers in the circumferential direction decrease by 25 - 30%, and in the meridional direction increase by 40 - 50%. With an increase in the rigidity of the chord, the thread D decrease. The conditions of the cord D during rolling of T are close to the given conditions of the D cycle work. The shear D of the rubber in the layers do not depend on the type of the chord. When a concentrated load acts, the thread D in the tread made of hard rubber is greater than in soft one. The type of the profile and its depth have no

S/631

SOV/81-59-5-17733

The Experimental Investigation of Deformation Occurring in Parts of the Tread in a Pneumatic Tire

significant effect on the cord and rubber D when T rolls along a smooth path. When a concentrated load acts upon T, the profile type, its depths and the thickness of the sub-groove layer have an effect on the cord thread D.

M. Khromov

Card 5/5

DROKHIN, S.N., inzhener.

Packing, storing and shipping leather goods. Leg.prom. 14 no.10:33-34 O '54. (MLRA 7:11)
(Leather industry)

DROZHZHIN, V.I.

Electromechanical vises. Stan.i instr. 31 no.7:34 J1 '60. (MIRA 13:7)
(Vises)

SEMKO, M.F., prof.; BASKAKOV, I.G., kand. tekhn. nauk; DROZHZHIN, V.I., inzh.; KACHER, V.A., kand. tekhn. nauk; RUDNEV, A.V. kand. tekhn. nauk, retsenzent; KUNIN, P.A., inzh., red.

[Mechanical processing of plastics; cutting] Mekhanicheskaia obrabotka plastmass; frezerovanie. Moskva, Mashinostroenie, 1965. 131 p. (MIRA 18:4)

DROZHZHIN, V. M.

Drozhzhin, V. M., Protopopov, Kh. V. - The Chemical Processing of Samples at the Radiocarbonic Dating by the Scintillation Method.

The Sixth Session of the Committee for Determining the Absolute Age of Geologic Formations at the Department of Geologic-Geographical Sciences (OGGN) of the USSR Academy of Sciences at Sverdlovsk in May 1957

Izv. Ak Nauk SSSR, Ser. Geol., No. 1, 1958, p. 115-117 author Pekarskaya, T. B.

DROZHZHIN, V. M., ROMANOVA, Ye. N., STARIK, I. Ye., RUDENKO, S. I., ARTEMEV, V. V., BUTOMO, S. V. (USSR)

"Liquid Scintillators for Radiocarbon Dating In Archaeology."

report presented at the Conference on Radioisotopes in Metallurgy and Solid State Physics, IAEA, Copenhagen, 6-17 Sept. 1960.

L 9730-66 EWT(1)/EWT(m) DIAAP GW
ACC NR: AP5025868 SOURCE CODE: UR/0020/65/164/004/0910/0912

AUTHOR: Lazarev, K.F.; Grashchenko, S.M.; Nikolayev, D.S.; Drozhzhin, V.M. 36 35 B

ORG: none

TITLE: Mesothorium-I concentration in the Black Sea waters

SOURCE: AN SSSR. Doklady, v. 164, no. 4, 1965, 910-912

TOPIC TAGS: geochemistry, ocean dynamics, ocean current, ocean property, radioisotope, radioactivity

ABSTRACT: Existing data on radioisotope concentration in sea water are limited to the Ra^{226} element. The paper presents in the form of comprehensive tables results of MsTh-I determination in various sections of the Black Sea and of Th-X concentration in its coastal waters. An analysis of the results shows that 1) the MsTh-I concentration in water most remote from the shores exceeds by some three orders of magnitude the concentration of Th^{232} which starts the particular radioactive family; this means that in seas MsTh-I seems to have its own geochemical history independent on the behavior of its Th^{232} ancestor; and 2) changes in the MsTh-I concentration are closely related to the speed and direction of ocean water and, consequently, this element can serve as a sensitive

Card 1/2

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indicator of the formation and transfer of masses of sea water. The paper was presented by Academician N. M. Strakhov, 28 Apr 65. The authors extend their deep gratitude to O.P. Korn for his help during the experimental part of the investigation. Orig. art. has: 1 figure and 2 tables.

SUB CODE: 08, 18 / SUBM DATE: 17Aug64 / ORIG REF: 006 / OTH REF: 004

Card 2/2

NIKOLAYEV, D.S.; LAZAREV, K.F.; KORN, O.P.; YAKUNIN, M.I.; DROZHZHIN, V.M.; SAMARTSEVA, A.G.

Isotopic composition of uranium in the waters and sediments of the Black and Azov Seas. Dokl. AN SSSR 165 no.1:187-189 N '65. (MIRA 18:10)

1. Submitted April 10, 1965.

LAZAREV, K.F.; NIKOLAYEV, D.S.; GRASHCHENKO, S.M.; DROZHZHIN, V M.

Radium concentration in the Azov Sea and some lagoons. Dokl. AN SSSR 164 no.5:1151-1153 O '65. (MIRA 18:10)

1. Submitted April 28, 1965.

DROZHZHIN, V.M.; LAZAREV, K.F.; NIKOLAYEV, D.S.

Determination of radium in natural waters without its preliminary chemical isolation. Radiokhimiia 7 no.3:374-375 '65.
(MIRA 18:7)

USSR/Diseases of Farm Animals. Diseases Caused by Bacteria and Fungi. R-1

Abs Jour: Ref Zhur-Biol., No 18, 1958, 83542

Author : Levchenko, I. D., Drozhzhin, V. N.
Institute: Altay Kray Scientific Research Veterinary Station.
Title : Results of Brucellosis Examinations of Sheep with Agglutination Reaction Tests with a 10 percent Sodium Chloride Solution in Instances of Mass Abortions.

Orig Pub : Sb. nauchn. rabot Altaysk. krayevoy n.-i. vet. st., 1957, vyp. 1, 67-68

Abstract : In tests performed by the authors, agglutination reaction (AR) with a 10 percent NaCl solution uncovered many more brucellosis afflicted sheep than AR with a 0.85 NaCl solution. The authors recommend that for complex examinations of sheep originating from flocks which show evidence of acute brucellosis and mass abortions, AR tests with a 10 percent NaCl solution

Card 1/2

USSR/Diseases of Farm Animals. Diseases Caused by Bacteria and Fungi. R-1

Abs Jour: Ref Zhur-Biol., No 18, 1958, 83543

Abstract: should be performed from the authors' summary.

Card 2/2

BARYSHEV, P.B.; DROZHZHIN, V.N.

Role of farm animals as a potential source of leptospirosis infection in Altai Territory. Zhur.mikrobiol.,epid.i immun. 40 no.12:60-64 D '63. (MIRA 17:12)

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SKRYSHEVSKIY, Anton Frantsevich; GOLIK, A.Z., prof., otv. red.; DROZHZHIN, E.V., red.; OKOPNAYA, Ye.D., tekhn. red.

[Diffraction of X rays, electrons, and neutrons in gases and the molecular structure]Difraktsiia rentgenovskikh luchei, elektronov i neitronov v gazakh i stroenie molekul. Kiev, Izd-vo Kievskogo univ., 1961. 84 p. (MIRA 15:9)
(X rays—Diffraction) (Electron diffraction examination) (Neutrons—Diffraction)

CHUKHNO, Anatoliy Andreyevich; KOROID, O.S., otv. red.; DROZHZHIN, Ye.V.[Drozhzhyn, IE.V.], red.; OKOPNA, O.D., tekhn. red.

[Distribution of material and cultural goods during the large-scale building of communism]Rozpodil material'nykh i kul'turnykh blah v period rozhornutoho budivnytstva komunizmu. Kyiv, Vyd-vo Kyivs'koho univ., 1962. 266 p. (MIRA 15:10)

1. Chlen-korrespondent Akademii nauk Ukrainskoy SSR (for Koroid).

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BAYEV, Konstantin L'vovich; doktor fiziko-matematicheskikh nauk; DROZHZHIN, Yu.N., redaktor; SAKHAROVA, N.N., tekhnicheskiy redaktor.

[Creators of modern astronomy; Copernicus, Bruno, Kepler, Galileo] Sozdateli novoi astronomii; Kopernik, Bruno, Kepler, Galilei. Moskva, Gos.uchebno-pedagog. izd-vo Ministerstva prosveshchenia RSFSR, 1955. 121 p. (MLRA 9:6)
(Astronomers)

SEMAKIN, Nikolay Kus'mich; DROZHZHIN, Yu.N., redaktor; RYBIN, I.V., tekhnicheskiy redaktor.

[Teaching astronomy] Iz opyta prepodavaniia astronomii. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshcheniia RSFSR, 1956. 84 p. (Astronomy--Study and teaching) (MLRA 9:5)

DROZHZHIN, Yu. N.

BEZNIKOV, Leonid Isaakovich; YUS'KOVICH, Vasiliy Fomich; DROZHZHIN, Yu.N., redaktor; SMIRNOV, G.I., tekhnicheskiy redaktor

[Atomic structure in school physics courses] Stroenie atoma v shkol'nom kurse fiziki; posobie dlia uchitelei. Izd. 2-oe, perer. i dop. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshchenila RSFSR, 1956. 110 p. (MIRA 10:4)
(Atoms--Study and teaching)

DROZHZHIN, Yu.N.

PANICH, Kulya Ikbalev; DROZHZHIN, Yu.N., redaktor; PONOMAREVA, A.A., tekhnicheskiy redaktor

[Experience in organising laboratory work in physics] Iz opyta organizatsii laboratornogo praktikuma po fizike. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1956. 87 p. (MLRA 10:4)
(Physics--Study and teaching)

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NOVIKOV, Igor' Dmitriyevich; SHISHKOV, Vitaliy Alekseyevich; DROZHZHIN, Yu.N., redaktor; NIKOLAYEV, B.L., tekhnicheskiy redaktor

[Homemade astronomical devices and instruments] Samodel'nye astronomicheskie pribory i instrumenty. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1956. 54 p. (MLRA 10:6)
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ZIGEL', Feliks Yur'yevich; DROZHZHIN, Yu.N., redaktor; KOZLOVSKAYA, M.D., tekhnicheskiy redaktor

[Artificial earth satellites] Iskusstvennyi sputnik zemli. Moskva, Gos.uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1956. 94 p.
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[Assignments for students in secondary correspondence schools; physics; ninth grade] Zadaniia dlia uchashchikhsia zaochnoi srednei shkoly; fizika, IX klass. Sost. N.N.Kravchenko. Izd. 8-oe. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshcheniia RSFSR, 1956. 97 p. (MLRA 10:3)

1. Russia (1917- R.S.F.S.R.) Glavnoye upravleniye shkol. (Physics--Study and teaching)

MIKRYUKOV, Vasiliy Yemel'yanovich; DROZHZHIN, Yu.N., redaktor; KOZLOVSKAYA, M.D., tekhnicheskiy redaktor

[A course in thermodynamics] Kurs termodinamiki. Izd. 2-oe, perer. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshcheniia RSFSR, 1956. 229 p. (MLRA 9:9)
(Thermodynamics)

DROZHZHIN, YU. N.

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[From the practice of outfitting a physical laboratory] Iz opyta oborudovaniia fizicheskogo kabinete. Moskva, Gos.uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1957. 112 p. (MLRA 10:10)
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DROZHZHIN, Yu. N.

ZHUREKHOV, Gennadiy Ivanovich; DUKOV, V.M., redaktor; DROZHZHIN, Yu.N., red.; SMIRNOV, G.I., tekhn.red.

[Using demonstrations in teaching applied sciences; a manual for teachers] Politekhnicheskoe obuchenie v demonstratsionnykh opytakh; posobie dlia uchitelei. Izd. 2-oe, ispr. i dop. Moskva, Gos.uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1957. 194 p. (MIRA 11:2)
(Science—Study and teaching)

DROZHZHIN, Yu.N.

VETISOV, Vasiliy Aleksandrovich; DROZHZHIN, Yu.N., red.; SMIRNOV, G.I., tekhn.red.

[Laboratory work in physics for students in grades 8-10] Laboratornye raboty po fizike, dlia uchashchikhsia 8-10 klassov. Moskva, Gos.uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1957. 208 p. (MIRA 11:2)
(Physics--Laboratory manuals)

USOVA, Antonina Vasil'yevna,;DROZHZHIN, Yu.N., red.; VOLCHEK, V.L.,tekhn. red.

[Studying the motion of liquids and gases in secondary schools] Izuchenie dvizheniia zhidkostei i gazov v srednei shkole. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1958. 73 p. (MIRA 11:12)

(Fluid dynamics--Study and teaching)

SOKOLOVA, Yevgeniya Nikolayevna.; DROZHZHIN, Yu.N., red.; MATANOV, M.I., tekhn. red.

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(Center of mass)

TERENT'YEV, Mikhail Mokeyevich; DROZHZHIN, Yu.N., red.; SHCHEPTEVA, T.A., tekhn. red.

[Studying heat engines in the physics course for the ninth grade] Izuchenie teplovykh dvigatelei v kurse fiziki IX klassa; posobie dlia uchitelei. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1958. 125 p. (MIRA 14:7)
(Physics--Study and teaching) (Heat engines)

GEL'FER, Yakov Matveyevich; DUKOV, V.M., red.; DROZDOVLIN, Yu.N., red.; TSYPPO, P.V., tekhn. red.; SMIRNOVA, M.I., tekhn. red.

[Law of the conservation and transformation of energy; manual for teachers] Zakon sokhraneniia i prevrashcheniia energii v ego istoricheskom razvitii; posobie dlia uchitelia. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1958. 257 p. (MIRA 11:9)
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SOKOLOVA, Yevgeniya Nikolayevna; DROZHZHIN, Yu.N., red.; VOLCHEK, V.L., tekhn.red.

[To the young physicist] IUnomu fiziku. Izd.2., perer. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1959. 292 p. (MIRA 12:8)
(Physics--Juvenile literature)

SOKOLOV, Ivan Ivanovich; DROZHZHIN, Yu.N., red.; MAKHOVA, N.N., tekhn.red.

[Methods of teaching physics in the secondary school] Metodika prepodavaniia fiziki v srednei shkole. Izd.4., perer. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1959. 373 p. (MIRA 13:2)
(Physics--Study and teaching)

POPKO, Yuriy Mikhaylovich, kand.pedagog.nauk; KNYAZEVA, Lora Aleksandrovna, kand.pedagog.nauk; VOLKOVA, Z.V., prof., nauchnyy red.; DROZHZHIN, Yu.N., red.; SMIRNOV, G.I., tekhn.red.

[Physics laboratory manual; textbook for students of the physics and mathematics faculties of pedagogical institutes] Rukovodstvo k praktikumu po fizike; uchebnoe posobie dlia studentov fiziko-matematicheskikh fakul'tetov pedagogicheskikh institutov. Pod red. Z.V.Volkovoi. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv. RSFSR, 1959. 442 p. (MIRA 13:1)

1. Sotrudniki kafedry obshchey fiziki Moskovskogo gorodskogo pedagogicheskogo instituta (for Popko, Knyazeva).
(Physics--Laboratory manuals)

FINKEL'SHTEYN, Grigoriy Markovich; GOLUBEVA, O.M. (Moskva), prof., retsenzent; VOROMKOV, I.M. (Moskva), prof., retsenzent; DROZHZHIN, Yu.N., red.; TSIRUL'NITSKIY, N.P., tekhn.red.

[Course in theoretical mechanics; a textbook for students of pedagogical institutes] Kurs teoreticheskoi mekhaniki; uchebnoe posobie dlia studentov pedagogicheskikh institutov. Moskva, Gos. uchebno-pedagog.izd-vo M-va prosv. RSFSR, 1959. 442 p. (MIRA 12:5)
(Mechanics)

MARKOVICH, Mark Moiseyevich; UVAROV, Petr Yakovlevich; DROZHZHIN, Yu.N., red.; KOVALENKO, V.L., tekhn. red.

[Engineering taught in a physics class] Tekhnika na urokakh fiziki. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1960. 164 p. (MIRA 14:6)

(Engineering—Study and teaching)

KUDRYAVTSEV, Boris Borisovich; DROZHZHIN, Yu.N., red.; NATAPOV, M.I., tekhn.red.; KORNEYEVA, V.I., tekhn.red.

[Textbook on physics; heat and molecular physics] Kurs fiziki; teplota i molekuliarnaia fizika. Moskva, Gos.uchebno-pedagog. izd-vo M-va prosv.RSFSR, 1960. 209 p. (MIRA 13:9)
(Heat) (Molecular theory)

RUMER, Yu.B.; RYVKIN, M.S.; GOBANOV, A.A., red.; DROZHZHIN, Yu.N., red.; KORNEYEVA, V.I., tekhn.red.

[Theory of relativity] Teoriia otnositel'nosti. Moskva, Gos. uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1960. 211 p. (MIRA 13:7)

(Relativity (Physics))

MIKRYUKOV, Vasiliy Yemel'yanovich; DROZHZHIN, Yu.N., red.; KOVALENKO, V.L., tekhn.red.

[Course of thermodynamics] Kurs termodinamiki. Izd.3. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1960. 235 p. (MIRA 13:7)

(Thermodynamics)

GEL'FER, Yakov Matveyevich; DROZHZHIN, Yu.N., red.; KARPOVA, T.V., tekhn.red.

[What is heat? A manual for students] Chto takoe teplota; posobie dlia uchashchikhsia. Moskva, Gos.uchebno-pedagog. izd-vo M-va prosv.RSFSR, 1960. 154 p. (MIRA 14:3)

(Heat--Handbooks, manuals, etc.)

SEMENCHENKO, Vladimir Ksenofontovich; TERLETSKIY, Ya.P., prof., retsenzent; DROZHZHIN, Yu.N., red.; KOVALENKO, V.L., tekhn. red.

[Selected chapters of theoretical physics] Izbrannye glavy teoreticheskoi fiziki. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1960. 337 p. (MIRA 14:7)

(Physics)

MARGULIS, Pavel Semenovich; ROMANENKO, Nikolay Trofimovich; DROZHZHIN, Yu.N., red.; SMIRNOVA, M.I., tekhn.red.

[Guide for practical laboratory work in heat engineering; course on machinery] Rukovodstvo k praktikumu po teplotekhnike (kursa mashinovedeniia). Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv., 1961. 60 p. diagrs. (MIRA 15:2)
(Heat engineering)

KUDRYAVTSEV, Boris Borisovich; DROZHZHIN, Yu.N., red.; SMIRNOVA, M.I., tekhn. red.

[Use of ultrasonic methods in the study of substance] Ul'trazvukovye metody issledovaniia veshchestva. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1961. 132 p. (MIRA 15:4)

(Ultrasonic testing)

DANILOV, Nikolay Ivanovich; DROZHZHIN, Yu.N., red.; TATURA, G.L., tekhn. red.

[Units of measurements; handbook for teachers of physics] Edinitsy izmerenii; spravochnik dlia prepodavatelei fiziki. Moskva, Uchpedgiz, 1961. 302 p. (MIRA 15:9)
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KOROLEV, Fedor Andreyevich; DROZHZHIN, Yu.N., red.; TATURA, G.L., tekhn. red.; KREYS, I.G., tekhn. red.

[Physics couse; optics, atomic and nuclear physics] Kurs fiziki; optika, atomnaia i iadernaia fizika. Moskva, Uchpedgiz, 1962. 503 p. (MIRA 15:6)

(Physics)

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OVCHAROVA, A.; DROZHZHINA, K.; KABANOV, N.Ya., konsul'tant; [redacted]VA, D., r[redacted]., tekhnicheskiy redaktor.

[A high aim] Bol'shaia tsel'. Moskva, Profizdat, 1953. 62 p.

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CHAPOVSKAYA, Ye.V.; DROZHZHINA, T.M.

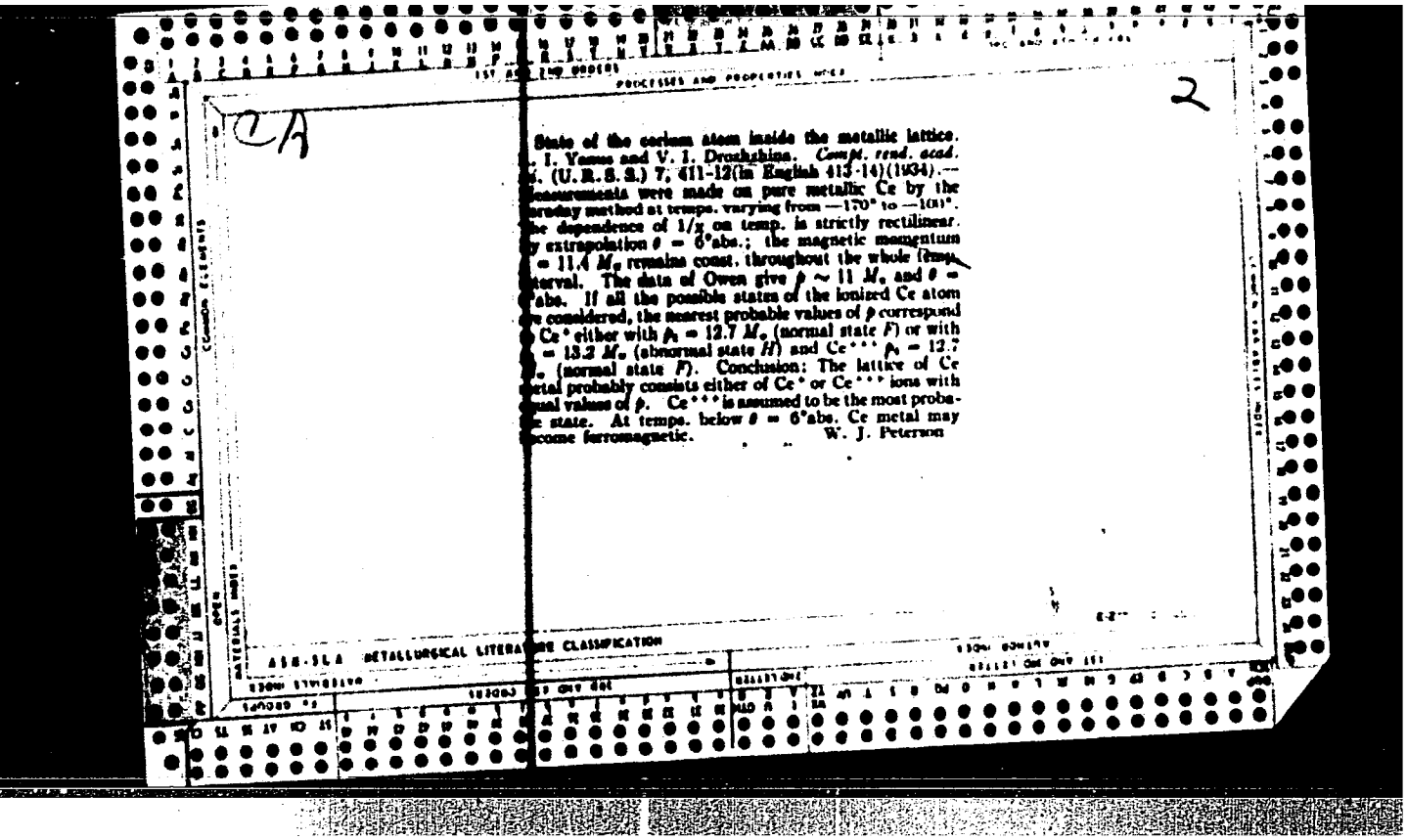
Laboratory experiment in studying moisture losses of Vakhsh soils. Dokl.AN Tadzh.SSR 2 no.2:39-43 '59.
(MIRA 13:4)

1. Institut pochvovedeniya Akademii nauk Tadzhikskoy SSR. Predstavleno chlenom-korrespondentom AN Tadzhikskoy SSR V.A. Starikovym.
(Soil moisture) (Vakhsh Valley--Soils)

ABOL, L.A., red.; DROZHZHINA, T.N., red.; KOBLENTZ, E.M.

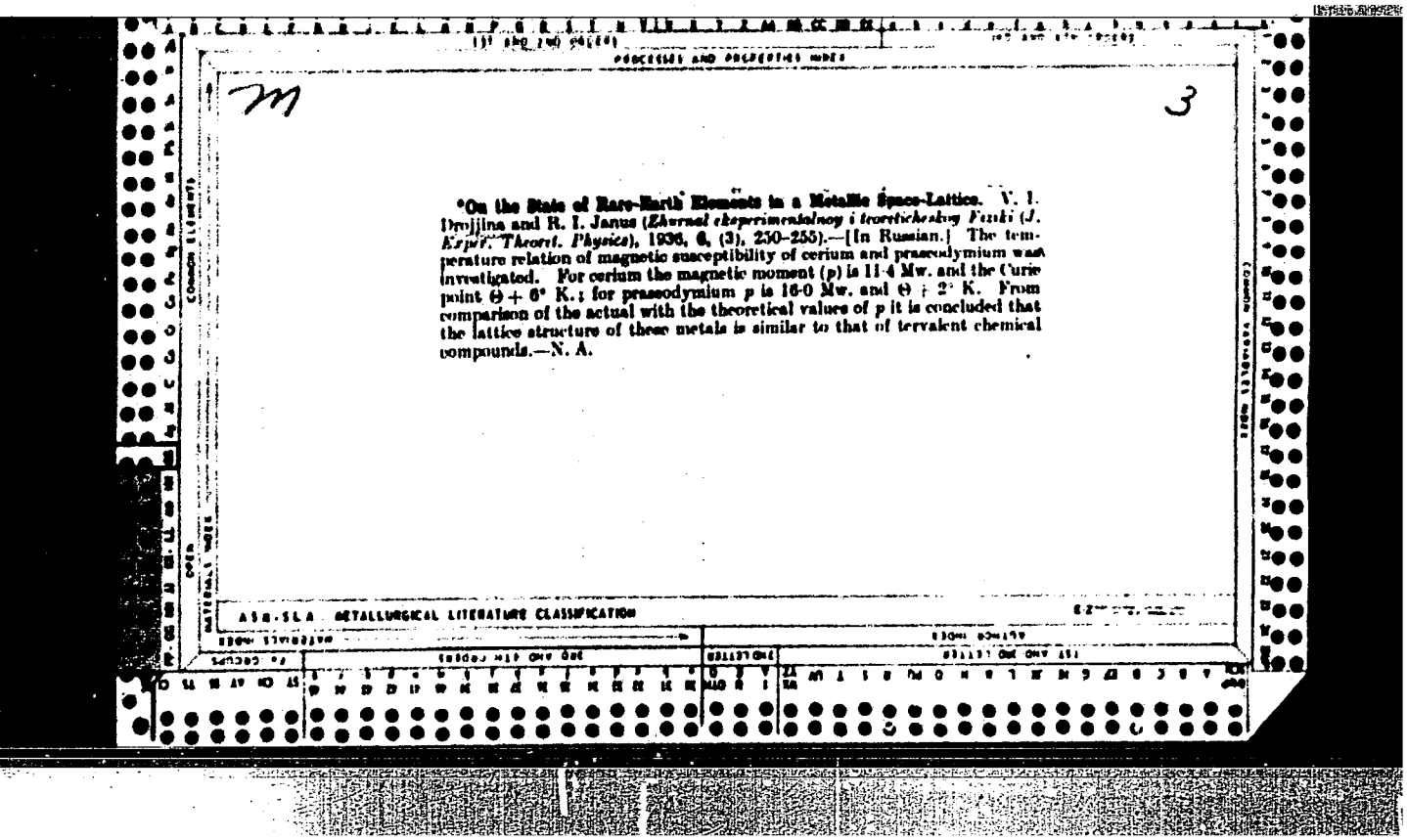
[In the forests of the Northern Caucasus] V lesakh Severnogo Kavkaza. Moskva, 1964. 27 p. (MIRA 18:7)

1. Moscow. TSentral'nyy nauchno-issledovatel'skiy institut informatsii i tekhniko-ekonomicheskikh issledovaniy po lesnoy, tsellyulozno-bumazhnoy, derevoobrabatyvayushchey promyshlennosti i lesnomu khozyaystvu.



State of the cerium atom inside the metallic lattice. I. Yamaa and V. I. Drozhzhina. *Compt. rend. acad. sci. (U. R. S. S.)* 7, 411-12(In English 413-14)(1934).—Measurements were made on pure metallic Ce by the Faraday method at temps. varying from −170° to −101°. The dependence of $1/\chi$ on temp. is strictly rectilinear. By extrapolation $\theta = 6°$abs.; the magnetic momentum $p = 11.4\ M_0$ remains const. throughout the whole temp. interval. The data of Owen give $p \sim 11\ M_0$ and $\theta = 0°$abs. If all the possible states of the ionized Ce atom are considered, the nearest probable values of p correspond to Ce^{+} either with $p_s = 12.7\ M_0$ (normal state F) or with $p = 13.2\ M_0$ (abnormal state H) and Ce^{+++} $p_s = 12.7\ M_0$ (normal state F). Conclusion: The lattice of Ce metal probably consists either of Ce^{+} or Ce^{+++} ions with equal values of p. Ce^{+++} is assumed to be the most probable state. At temps. below $\theta = 6°$abs. Ce metal may become ferromagnetic.

W. J. Peterson



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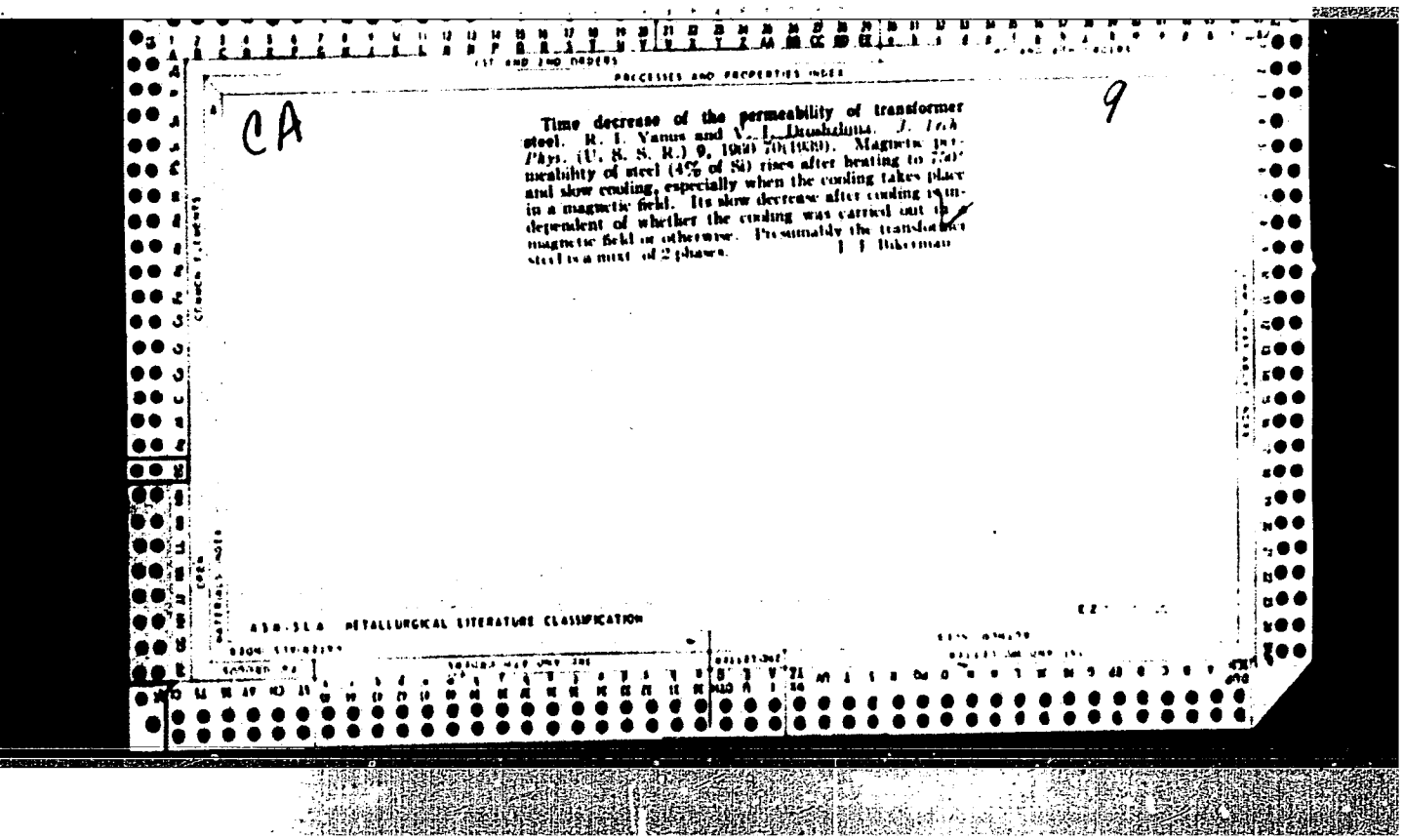
On the State of Rare-Earth Elements in a Metallic Space-Lattice. V. I. Dvojlina and R. I. Janus (*Zhurnal eksperimentalnoy i teoreticheskoy Fiziki* (*J. Exptl. Theoret. Physics*), 1936, **6**, (3), 230–255).—[In Russian.] The temperature relation of magnetic susceptibility of cerium and praseodymium was investigated. For cerium the magnetic moment (p) is 11·4 Mw. and the Curie point $\Theta + 6°$ K.; for praseodymium p is 16·0 Mw. and $\Theta + 2°$ K. From comparison of the actual with the theoretical values of p it is concluded that the lattice structure of these metals is similar to that of tervalent chemical compounds.—N. A.

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

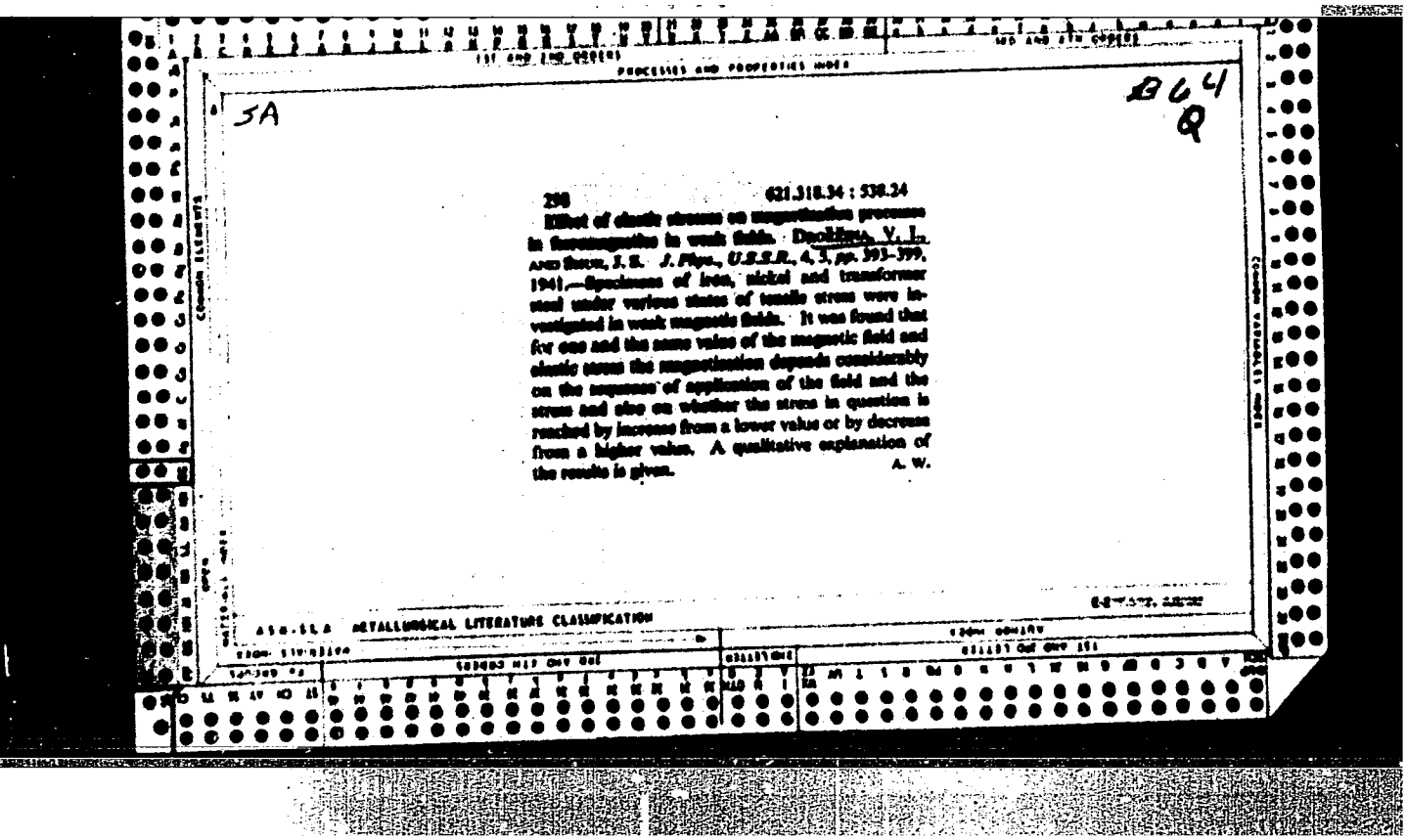


CA

9

Time decrease of the permeability of transformer steel. R. I. Yanus and V. I. Druzhinin. *J. Tech. Phys.* (U. S. S. R.) 9, 1939 70(1939). Magnetic permeability of steel (4% of Si) rises after heating to 750° and slow cooling, especially when the cooling takes place in a magnetic field. Its slow decrease after cooling is independent of whether the cooling was carried out in magnetic field or otherwise. Presumably the transformer steel is a mixt. of 2 phases. I. J. Hoffman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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298 621.318.34 : 538.24

Effect of elastic stresses on magnetization processes in ferromagnetics in weak fields. Dorfman, Ya. G. and Shur, Ya. S. *J. Phys., U.S.S.R.*, 4, 3, pp. 393–399, 1941.—Specimens of iron, nickel and transformer steel under various states of tensile stress were investigated in weak magnetic fields. It was found that for one and the same value of the magnetic field and elastic stress the magnetization depends considerably on the sequence of application of the field and the stress and also on whether the stress in question is reached by increase from a lower value or by decrease from a higher value. A qualitative explanation of the results is given. A. W.

A 58.5 A METALLURGICAL LITERATURE CLASSIFICATION

USSR/Physics Hysteresis, Magnetic
Ferromagnetism

"Temperature vs. Magnetic Hysteresis in Ferromagnets," [illegible], Ya. S. Shur, Institute of Physics of Metals, Ural Branch, Academy of Sciences of the USSR, 5 pp

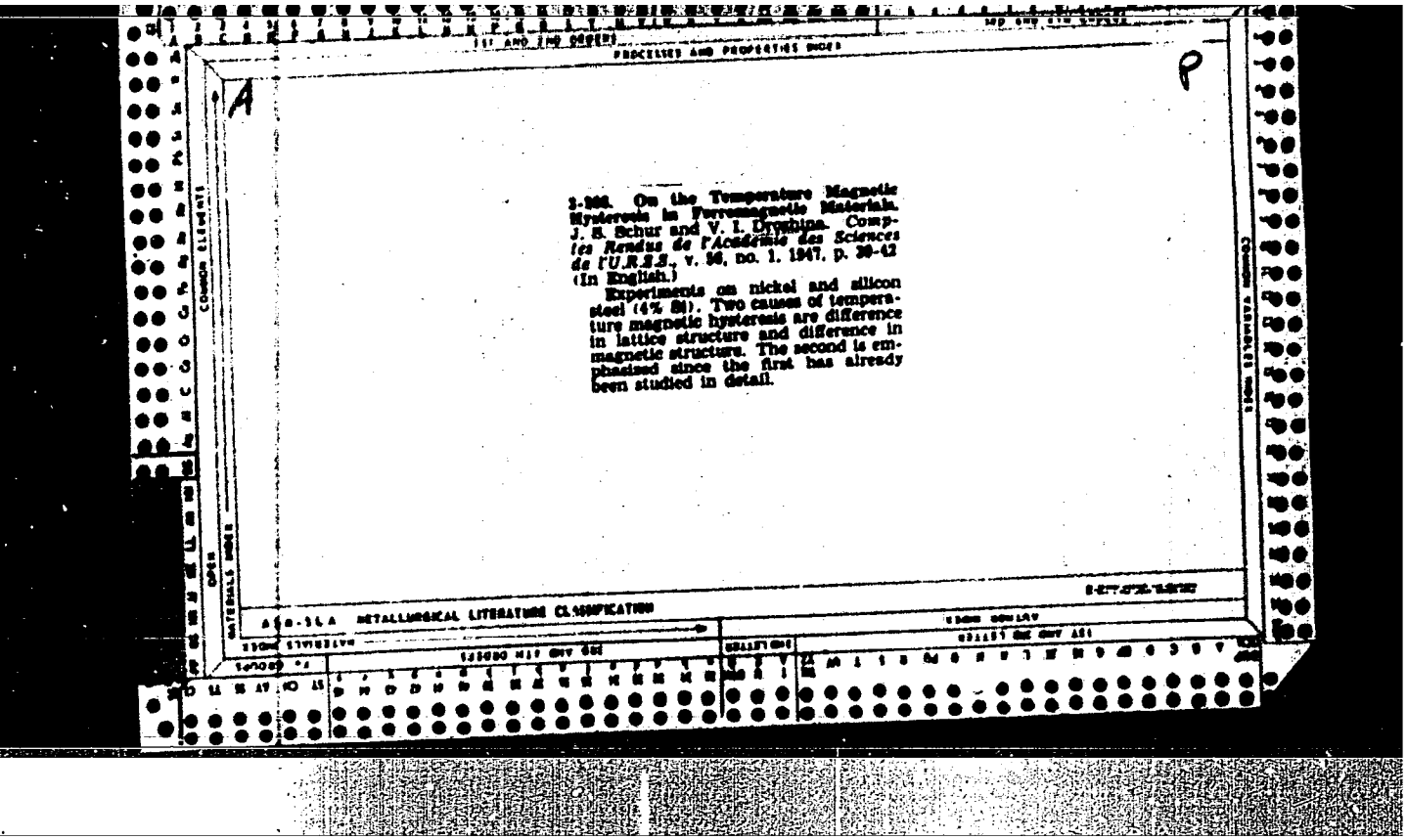
"Izv Ak Nauk, Ser Fizich" Vol XI, No 5 - p. 539, 1947

An account of work which was conducted to study the effect of temperature on the magnetic hysteresis factor of samples of nickel and ferroceramics with the purpose of determining the basic regularities of this phenomena. All the experiments were conducted on long, thin samples and at temperatures ranging from -195° C to as high as 730° C. 10 36893

SHUR, Ya.S.; DROZHZHINA, V.I.

On the temperature magnetic hysteresis in ferromagnetic bodies. Part. I. Zhur.eksp.i teor.fiz. 17 no.7:607-613 '47. (MLRA 6:7)

1. Institut fiziki metallov, Ural'skiy filial Akademii Nauk SSSR.
(Magnetic induction)



3-966. On the Temperature Magnetic Hysteresis in Ferromagnetic Materials. J. S. Schur and V. I. Dryubina. *Comptes Rendus de l'Academie des Sciences de l'U.R.S.S.*, v. 56, no. 1, 1947, p. 39-42 (In English.)

Experiments on nickel and silicon steel (4% Si). Two causes of temperature magnetic hysteresis are difference in lattice structure and difference in magnetic structure. The second is emphasized since the first has already been studied in detail.

Br. Abs. BT-1, Ka. Metallurgy

Change in electrical resistance (Thomson effect) of highly coercive alloys in magnetic fields. V. I. Dmukhina and Y. S. Shur *U. tech. Phys., USSR*, 1940, 10, 149—152.—An attempt is made to explain the connexion between the value of the coercive force and the relation of the signs of the longitudinal and transverse Thomson effects in a highly coercive alloy (Fe 60, Ni 27, Al 15%) in which the value of the coercive force can be changed over a wide range. Measurements made in fields up to 1000 oersteds in the longitudinal direction and up to 4000 oersteds in the transverse direction show that the anomalous character of the Thomson effect is maintained independently of the value of the coercive force (from 20—300 oersteds). The abs. value of the effect changes very little for a considerable difference in the value of the coercive force, and for a given value of coercive force the character of the change in the Thomson effect remains the same independent of the temp. and time of annealing. The anomalous effect also occurs with a 4% Si–Fe alloy, but not with a 52 : 10 : 38 Co–V–Fe alloy (with a coercive force of 300 oersteds) for which the longitudinal effect has a positive sign and the transverse effect a negative sign.

W. HUGHES.

B1-5, Ferrous Metallurgy

Bv. ab.

Effect of cold and recrystallization processes on the magnetic properties of soft magnetic materials. V. I. Drozhina, N. O. [illegible] and Y. S. Shur (J. tech. Phys. USSR, 1948, 18, [illegible]—[illegible]).—The magnetic properties of transformer steel (4% of Si) and Mo permalloy (Ni 78·5, Mo 4, Fe 17·5%) are studied after annealing at 1000° for 2 hr. followed by pressing and a second annealing at [illegible]° for 1 hr. The results obtained indicate that the present technique for producing articles for magnetic circuits from soft magnetic materials is faulty due to emphasis being laid on obtaining high magnetic properties in material from which finished articles are made, and not on the final magnetic articles themselves. Since such materials lose their magnetic properties to a considerable extent in processes such as stamping, drilling, etc. during production of the final articles, another procedure is recommended, and its superiority over the older technique is demonstrated in large-scale tests.

W. H[illegible].

Evaluation B-79119

DROZHZHINA, V. I.

USSR/Physics
Alloys, Magnetic
Thermomagnetic Effect

Jan 49

"The Magnetic Structure of Highly Coercive Alloys: II, Effect of Thermomagnetic Treatment on the Electric Resistance of Highly Coercive Alloys of Alnico," V. I. Drozhzhina, M. G. Luzhinskaya, Ya. S. Shur, Inst Phys of Metals, Ural Affiliate, Acad Sci USSR, 5 pp

PA 24/49T112

"Zhur Tekh Fiz" Vol XIX, No 1, pp 95-99.

Establishes connection between anisotrophy of the magnetic characteristics with anisotrophy in the microstructure of certain high-coercive alloys (alnico in this case), both of which arise as result of thermomagnetic processing.

24/49T112

DROZHZHINA, V. I.

SA

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538.082.742 : 621.317.715 : 621.317.42

2817. Measurement of small differences of magnetic fluxes by a ballistic galvanometer. V. I. DROZHZHINA, E. E. SHABALINA AND R. I. YANUS. *J. Tech. Phys., USSR*, 20, 698–706 (*June*, 1950) *In Russian.*

The behaviour of a ballistic galvanometer under the action of 2 successive impulses of nearly equal intensity, but of opposite sign, is investigated. The conditions are established under which the ballistic throw due to such impulses furnishes a sufficiently accurate measure of these impulses. The usefulness of the method is shown in measurements of hysteresis losses in soft ferromagnetic specimens in an open magnetic circuit. The comparison of the "impulse difference method" with the usual ballistic method shows the greater convenience of the former, because every B requires one reading only compared with the two of the latter. A mechanism for taking the corresponding periods τ may also be of a very simple kind. The relative error (δw_B) should be of the same order as that of the conventional method. However, whilst for the latter this represents the optimum attainable, the present method is susceptible of further improvements in this respect (reduction of τ/T, increase of R or reduction of L of the galv. circuit, or else using the galv. in fluxmeter conditions).

B. T. KRAUS

12

DROZHZHINA, V. I. Nov/Dec 52

USSR/Physics
Magnetic Hysteresis

"Effect of Plastic Deformation on Oscillational and Rotational Magnetic Hysteresis in Dynamo Iron," V. I. Drozhzhina, R. I. Yanus, and V. A. Vershinina, Inst of Phys of Metals, Ural Affiliates, Acad Sci USSR

Iz Ak Nauk SSSR, Ser Fiz, No 6, Vol 16, pp 695-702

Limite d experimental material processed leads to tentative conclusions that cold working and mechanical deformation possess deteriorating effect on rotational and oscillational hystereses, which values strongly depend also on structural states of samples.

251T30

DROZHZHINA, V. I. Nov/Dec 52

USSR/Physics
Magnetization,
Hysteresis

"Variations of Magnetic Hysteresis Loops During Variations of Maximum Magnetization," V. I. Drozhzhina, R. I. Yanus, V. P. Kartashov, and E. V. Kaplun, Inst. of Phys of Metals, Ural Affiliate, Acad Sci USSR

Iz Ak Nauk SSSR, Ser Fiz, Vol 16, No 6, pp 703-712

Analysis of behavior of microstructure of magnetism related to magnitude and direction of magnetic field. Expts show greatest magnetic hysteresis to correspond to remagnetization processes below saturation point. Problem was also analyzed by N. S. Akulov (Ferromagnetism, 1939).

251 T29

Vsesoyuznyy, T. 2

8

TRUDY INSTITUTA FIZIKI METALLOV, AKAD. NAUK. URAL'SKIY FILIAL, 1952, NO. 15

...t of the magnetic texture of ferromagnetic materials on the shape of curves ...

... and V-Perm... ... the ...

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YAJUS, R.I.; FRIDMAN, L.A.; DROZHZHINA, V.I.

On the sensitivity of ferromagnetic core coercimeters. Fiz.met.i metalloved. 1 no.1:118-123 '55. (MLRA 9:3)

1. Institut fiziki metallov Ural'skogo filiala Akademii nauk SSSR.
(Magnetic measurements)

DROZHZHINA,V.I.; LUZHINSKAYA,M.G.; MOROZOVA,V.M.; SHUR,Ya.S.

Effect of magnetic texture of ferromagnetic materials on the trend in the modifications of electric resistance curves in the magnetic field. Trudy Inst. fiz. met. no.15:42-56 '55.
(Ferromagnetism) (MLRA 8:6)

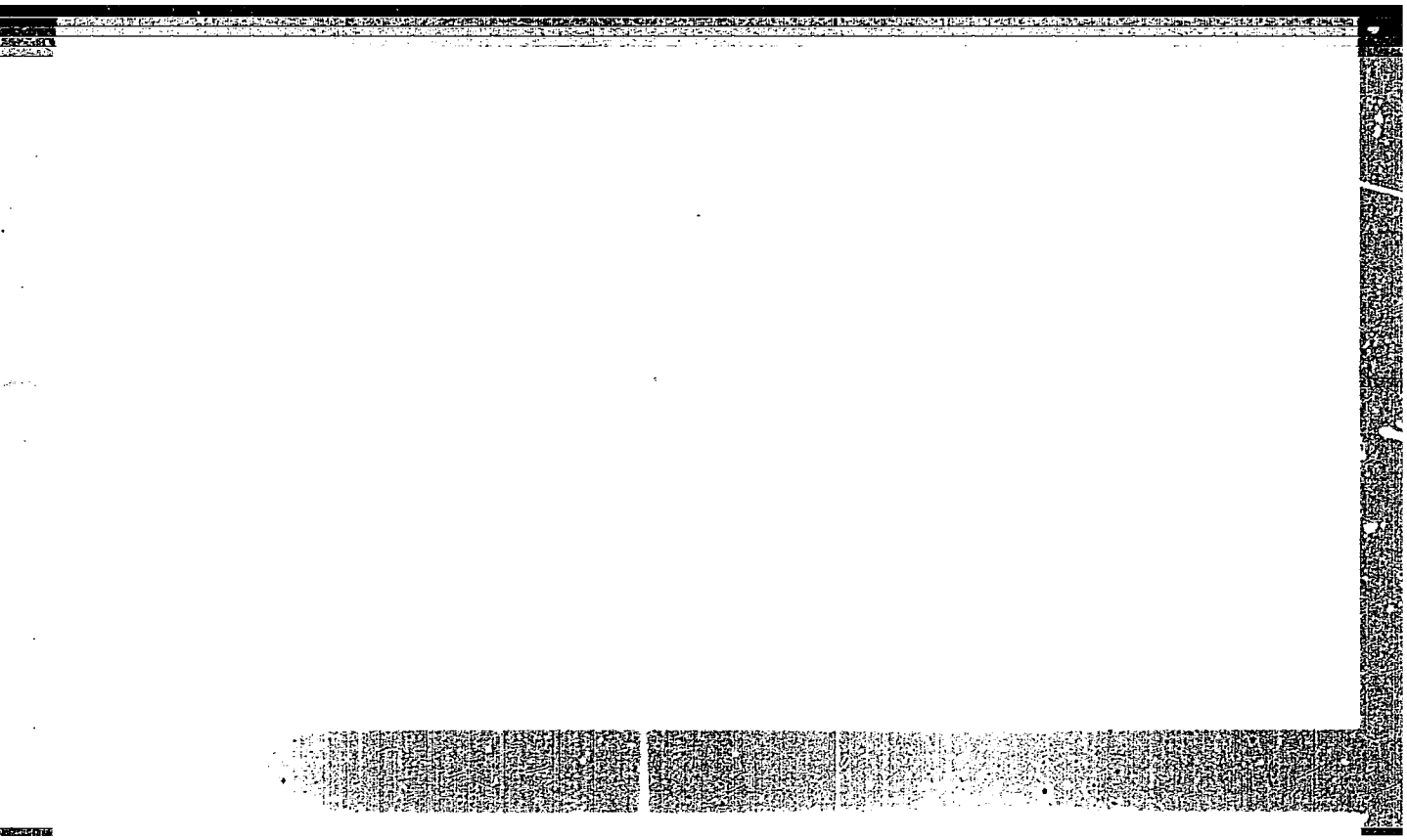
YANUS, R.I.; FRIDMAN, L.A.; DROZHZHINA, V.I.

Rapid method of coercive intensity control in sheet iron for electric equipment. Zav.lab.21 no.10:1193-1197 '55.
(MLRA 9:1)

1.Institut fiziki metallov Ural'skogo filiala Akademii nauk SSSR. (Sheet iron--Magnetic properties)

DROZHZHINA, V. I., and FRIDMAN, L. A

"Fluxgate Magnetometer for Measurement of Properties of Small specimens," a paper submitted at the International Conference on Physics of Magnetic Phenomena, Sverdlovsk, 23-31 May 56.



APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041123(

A. Magnetometer with a Ferrosounding Device for the Investigation of the Properties of Small Samples from Magnetically Soft Materials. 48-9-23/26

situated between the solenoids and the second one in a horizontal plane, parallel to the first one and at a distance of 130 mm from the first one, in a position, where the field of the sample is sufficiently weak. The magnetometers described here are distinguished by the simplicity of their indicator circuit. The complicated electronic layouts at the output of the ferr sounding device have been replaced by a simple symmetric, nonlinear resistance. There are 1 table, 1 figure, and 6 references, 5 of which are Slavic.

ASSOCIATION: Institute for Physics of Metals of the UFAN USSR (Institut fiziki metallov UFAN SSSR)

AVAILABLE: Library of Congress

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DROZHZHINA, V.I.

Category : USSR/Magnetism - Experimental Methods of Magnetism F-2

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4017

Author : Yanus, R.I., Fridman, L.A., Drozhzhina, V.I.
Inst : Institute of Metal Physics, Ural Branch, Academy of Sciences, USSR
Title : Rapid Method for the Monitoring the Coercive Force of Electrotechnical Iron Sheet Metal.

Orig Pub : Zavod. laboratoriya, 1956, 21, No 10, 1193-1197

Abstract : A new instrument is described, a coercitimeter, which makes it possible to measure H_c of electrotechnical iron sheets. The measurement is carried out in a closed magnetic loop, consisting of the tested sheet, located in a solenoid and pressed tightly against the faces of two halves of a yoke, as well as of a ferro-transducer (ferro-probe), which closes the outer portion of the magnetic circuit. The process of measuring H_c consists of the following. The tested sheet is magnetized and the demagnetizing current is turned on. The demagnetizing current is x increased until the pointer of the balance indicator returns to zero; the current in the solenoid is then a measure of the

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value of H_c of the measured tested sheet. It was established experimentally that there is sufficiently good correspondence between H_c and the electro-magnetic losses in the case of electrotechnical iron without grain orientation. This permits the use of the described coercitimeter for an indirect estimate of the value of the electro-magnetic losses, and consequently, also for the control of the quality of hot-rolled dynamo and transformer iron.

24 (3)
AUTHORS: Drozhzhina, V. I., Yerofeyeva, N. V. SOV/48-23-3-6/34

TITLE: On the Structure of the Family of Symmetric Hysteresis Loops of Ferromagnetics (O strukture semeystva simmetrichnykh petel' gisterezisa ferromagnetikov). 5. Investigation of Nickel-Zinc-Ferrites (5. Issledovaniye nikel'-tsinkovogo ferrita)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1959, Vol 23, Nr 3, pp 304-306 (USSR)

ABSTRACT: In the present paper the authors investigated the changes of static symmetric hysteresis cycles of nickel-zinc-ferrite NTs-400. If the quantity I_m (maximum magnetization of the cycle) is increased from 0.2 I_s to 0.95 I_s (I_s - saturation magnetization of the substance investigated) this ferrite has a spinel structure. The samples investigated were put at the disposal by L. I. Rabkin. The recording of the hysteresis loops was made ballistically according to the reversal method (magnetic reversal). The order of measurement applied differed somewhat from the normal method and is described in detail in references 1 and 4. The commutation curve of the

Card 1/3

magnetization $4\pi I$ (H) and the dependence curves $h_c(4\pi I_m)$ and $Q(4\pi I_m)$ are represented in figure 1. H denotes the amount of the magnetizing field, h_c - coercive force,

Q - specific hysteresis function (work). The width of the hysteresis loop at different values of the magnetic field was determined for each individual hysteresis cycle. The results obtained for the dependence $4\pi(I_1 - I_2)$ on the amount of the field are shown in figure 2 (I_1 and I_2 represent the magnetization according to the rising and the declining branch). On the basis of these results it may be concluded that in metal ferromagnetics (nickel-zinc-ferrite) the change of the static symmetric hysteresis loops at increasing I_m has the same character as that in polycrystalline metal ferromagnetics (iron silicide, ferrosilicon, and nickel). From the results of the investigation reported in the present paper and from other investigations (Refs 1 - 4) it

On the Structure of the Family of Symmetric Hysteresis Loops of Ferromagnetics. 5. Investigation of Nickel-Zinc-Ferrites

SOV/48-23-3-6/34

is concluded that a considerable hysteresis may be observed in the range of strong fields. So far the nature of this hysteresis has been unclarified. There are 2 figures and 5 Soviet references.

ASSOCIATION: Institut fiziki metallov Akademii nauk SSSR (Institute of Metal Physics of the Academy of Sciences USSR)

Card 3/3

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E192/E382

3.9100

AUTHORS: Drozhzhina, V.I., Zatsepin, N.N., Ponomarev, Yu.F., Fridman, L.A., Shturkin, D.A. and Yanus, R.I.

TITLE: Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol. 10, No. 3, pp. 359 - 366

TEXT: Aschenbrenner and Goubau (Ref. 1) described in 1936 a new highly sensitive method of measuring the potential of the magnetic field by means of nonlinear magnetic elements, ferroprobes, and they used these for measuring the fluctuations of the magnetic field of the Earth. The theory of such probes was developed more thoroughly in subsequent work of German and Soviet authors (Refs. 2-11), including the authors of this paper, for the case of a uniform DC field. Mikhaylovskiy and Spektor (Ref. 12) dealt with the operation of these probes in a nonuniform field. Considerable progress has been made in the techniques of applying them and as a result of this, highly sensitive magnetometers with very fast response are

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Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

available, for instance - for investigating the short-period variations of the magnetic field of the Earth, for searching for mineral deposits by means of aeromagnetic prospecting methods, etc. Furthermore, small-size instruments for measuring local values and gradients of highly nonuniform fields (magnetic flaw detectors for detecting invisible cracks in ferromagnetics), an automatic apparatus for various magnetic measurements, etc. have also been built. In spite of that, a large portion of the practically important problems has to be solved by means of inefficient purely empirical approach, since the theory of these probes is either insufficiently accurate or insufficiently general. In this paper the following problems are formulated and partly solved: 1) taking into consideration more accurately the field of magnetic charges of the core and the eddy-current field in it; 2) taking into consideration more accurately the possible nonuniformity of the

Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

measured field; 3) taking into consideration the influence of the deformation in the initial sections of the hysteresis loop caused by the effect of the measured field. The calculations are made on the basis of the following limitations and assumptions: a) the field to be measured is much smaller than the maxima of the excitation field; b) the influence of magnetic viscosity and after-effects is disregarded; c) the no-load condition is investigated.
It is assumed that the core of the ferro-element is in the form of a solid of revolution and that its axis is taken as the axis OX ; a certain point O on this axis is taken as the origin of the coordinates. The distance between an arbitrary point and the axis revolution is denoted as r and the radius of the lateral surface of the core on its cross-section by a coordinate x is denoted as $r_0(x)$. The core carries an excitation winding supplied with a current i_b ,

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Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

which changes with time t between two limit values $I_{\beta 1}$, the changes being monotonic and symmetrical, i.e. $i_\beta(t) = -i_\beta(t + T/2)$, where T is the period of the excitation current. The current produces an excitation field $H_\beta(x, t)$. The portion of the core between $x = a$ and $x = b$ is surrounded by a search winding which has $n_u(x)$ turns per unit length; the output terminals of this winding are connected to a very large resistance so that it can be assumed that the current in this winding is very small (open-circuit operation). The core is situated in the measured field $H_n(x)$. The field of eddy currents induced in the core is $H_\Phi(r,x,t)$ and the field of magnetic charges in the core is $H_\sigma(x,t)$. The core is assumed to be so thin that

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Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

the nonhomogeneities of the fields H_ϕ, H_n, and H_o in the transverse direction can be neglected. The vector of the magnetic induction is B and the total magnetic field is $H = H_\phi + H_n + H_\phi + H_o$. The electromotive force induced in the search winding is given by:

$$e = -2\pi \int_a^b n_u dx \int_0^r \frac{dB}{dt} r dr \qquad (1) .$$

From Eq. (1) it follows that:

Card 5/12

Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

$$\varepsilon = e - e^{o} = -2\pi \int_{a}^{b} n_u \, dx \int_{0}^{r_o} \frac{d(B - B^{o})}{dt} \, r dr \qquad (2) .$$

Eq. (2) can be written in a different form by taking into account the following property of the magnetisation curves of ferromagnetics. It is known from experiments (Refs. 13, 14) that if H varies monotonically between two limiting values H_A and H_B, which fulfil the inequalities:

$$H_A < -H_K; \quad H_B > H_K \qquad (3) ,$$

the terminal portions of the ascending and descending branches of the magnetisation loop follow the branches of the limiting magnetisation loop; H_K in Eqs. (3) is a constant of the

Card 6/12

Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

material which is slightly higher than its coercive force. The situation is illustrated in Fig. 1. Consequently, the loops B(H) can be uniquely determined by H_A and H_B. The magnetic inductance for the ascending and descending loops can be expressed by means of the Taylor series. If H_n is comparatively small, it is sufficient to consider only the first-order terms of these series. Consequently, the difference in the magnetic induction can be expressed by:

$$B - B^o = \mu_n^o(H_A - H_A^o) + \mu_\partial^o (H - H^o) \qquad (7)$$

where $\mu_\partial^o = \left(\frac{\partial B^o}{\partial H^o}\right)_{H=H^o}$ is the differential permeability

Card 7/12

Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

at $H = H^o$ and $\mu_n^o = \left(\frac{\partial B}{\partial H_A}\right)_{H=H^o}$.

It is now necessary to express the variables of Eq. (7) in terms of H_n . This problem can be solved accurately only for the case when H_θ and H_n are homogeneous over the whole volume of the core and the core is in the form of an ellipsoid whose thickness is so small that $H_\phi = 0$. In this case, Eq. (7) can be written as:

Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

$$B - B^{o} = \frac{4\pi H_{n}\left[(4\pi - N)(\mu_{\partial}^{o} - \mu_{n}^{o}) + \mu_{\partial}^{o}\mu_{\partial AK}^{o}N\right]}{(4\pi - N + \mu_{\partial}^{o}N)(4\pi - N + \mu_{\partial AK}^{o}N)} \qquad (11)$$

where N is the demagnetisation coefficient of the core and $\mu_{\partial AK}^{o}$ is defined by:

$$B_{A} - B_{A}^{0} = \mu_{\partial AK}^{o}\ (H_{A} - H_{A}^{o}) \qquad (10)\ .$$

Eq. (2) can now be written as:

Card 9/12

Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

$$\varepsilon = AH_n f(t); \quad A = 4\pi^2 \int_a^b n_u(x) r_o^2(x) dx \qquad (12) .$$

In the general case it is necessary to consider three additional equations apart from Eq. (7). These equations (including Eq. 7) are linear and homogeneous with respect to all the unknowns and the parameters H_n . It follows, therefore, that in those cases when the fields H_n are geometrically similar, i.e. if they can be defined by:

$$H_n = K_n h_n(x) \qquad (16)$$

Card 10/12

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Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation

where K_n is a coefficient independent of x,; $\varepsilon(t)$ will be of the same form and the scales of measurement will be determined by K_n. In those cases when not only the scale but also the form of $\varepsilon(t)$ is varying, the quantitative comparison of various $H_n(x)$ can be determined from $\varepsilon(t)$ only under certain limiting conditions.
There are 2 figures and 17 references: 13 Soviet and 4 non-Soviet.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals of the AS, USSR)

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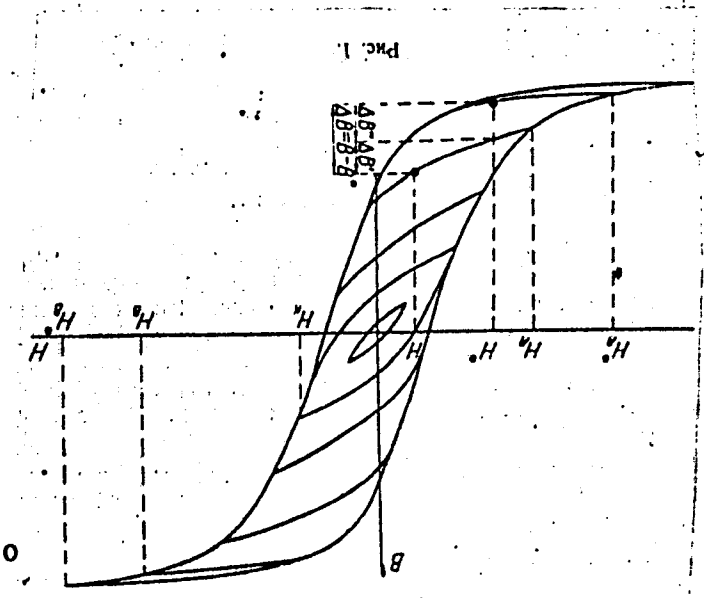
Theory of Ferroprobes with Longitudinal Symmetrical Saturation Excitation



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SUBMITTED: June 12, 1960

[redacted]

EKRETINA, N.M.; SHCHIERBA, G.I.; DROZHZHINA, V.V.; RIZA-ZADE, R.R.; TARASOVA, A.D.

Effect of Co^{60} gamma irradiation of tubers before planting on the yield and vitamin C content of potatoes. Radiobiologiia 3 no.1:139-142 '63. (MIRA 16:2)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(PLANTS, EFFECT OF GAMMA RAYS ON) (POTATOES)
(ASCORBIC ACID)

ANDREYEV, V.P.,polkovnik,; BORISOV, D.S., polkovnik,; YEVTUSHENKO, A.F., polkovnik,; ZHELEZNYKH, V.I.,dots., kand. tekhn. nauk, general-leytenant inzhenernykh voysk, otv. red.; TSIRLIN, A.D., doktor voyennikh nauk, general-polkovnik inzhenernykh voysk, red.; NAZAROV, K.S., dots., general-polkovnik inzhenernykh voysk v ostavke,red.; BADANIN, B.V., polkovnik v zapase,red.; BABUSHKIN, K.N.,polkovnik, red.; TSEGLENKO, P.G.,polkovnik, red.; YEMEL'YANOV, P.A.,polkovnik, red.; DROZHZHINOV, Ye.G.,polkovnik,red.; PAKHOMOV, V.Ya., polkovnik, red.; SMIRNOV, V.V.,polkovnik, red.; GORCHAKOV, A.D., podpolkovnik, red.; MEDNIKOVA, A.N., tekhn. red.

[Engineers of the Soviet Army in important operations of the Great Patriotic War; a collection of articles] Inzhenernye voiska Sovetskoi armii v vazhneishikh operatsiiakh Velikoi Otechestvennoi voiny; sbornik statei. Moskva, Voen. izd-vo M-va obor. SSSR, 1958. 309 p. (MIRA 11:12)

(World War, 1939-1945--Engineering and construction)

DROZHZHINOV, Yu.N.

Stabilization of the solution to Cauchy's problem for a parabolic equation. Dokl. AN SSSR 12 no.1:17-20 Ja '62.
(MIRA 14:12)

1. Predstavleno akademikom I.G. Petrovskim.
(Differential equations, Partial)

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TITLE: [illegible]bilisation of the solution of the Cauchy problem for [illegible]arabolic equation

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TEXT: Considered is the Cauchy problem

$$\frac{\partial u}{\partial t} = \sum_{k,l=1}^{n} a_{kl}(t) \frac{\partial^2 u}{\partial x_k \partial x_l} + \sum_{k=1}^{n} b_k(t) \frac{\partial u}{\partial x_k} + g(t)\, u; \quad (1)$$

$$u\Big|_{t=0} = \varphi(x_1, \ldots, x_n) \equiv \varphi(\bar{x}) \quad (3)$$

where $a_{kl}(t)$, $b_k(t)$, $g(t)$ are integrable in every finite t-interval, and where the conditions

$$a_{ij}(t) = a_{ij}(t), \quad \sum_{k,l=1}^{n} a_{kl}(t)\alpha_k\alpha_l \geq \gamma(t) \sum_{k=1}^{n} \alpha_k^2, \quad \gamma(t) > 0 \quad (1')$$

Card 1/5

are satisfied. Conditions are given, under which the solution of (1), (3) stabilises. Let

$$A_{kl}(t) = \int_0^t a_{kl}(\tau)d\tau\,,\quad B_k(t) = \int_0^t b_k(\tau)\,d\tau,\quad G(t) = \int_0^t g(\tau)\,d\tau.$$

Further let A be the matrix $\|A_{ij}(t)\|$ and let

$$M(\varphi) = \lim_{r\to+\infty} \frac{1}{\omega_n r^n} \int_0^r \int_\Omega \varphi(r'\bar{\omega})(r')^{n-1}\,d\Omega\,dr' = 1, \qquad (7)$$

where ω_n is the volume of the n-dimensional unit sphere, Ω being its surface and $\bar{\omega}$ a variable unit vector. With these notations there hold the following theorems:

Theorem 1: If 1.) Sp A $\to\infty$ for $t\to+\infty$; 2.) $(\mathrm{Sp}\ A)^n/\det A \leq K = \mathrm{const}$;

3.) $\sum_{i=1}^{n} B_i^2(t)/\mathrm{Sp}\ A \to 0$ for $t \to +\infty$; 4.) $\lim_{t\to+\infty} G(t) = c$; 5.) $\varphi(\bar{x})$ is bounded, $M(\varphi) = 1$, $\varphi(\bar{x}) - 1$ is of constant sign, then the solution $u(t,\bar{x})$ of (1), (3) stabilises to $1e^c$, i. e. it holds $\lim_{t\to+\infty} u(t,\bar{x}) = 1e^c$ uniformly with respect to x in every finite domain.

Theorem 2: If 1.) there exists a positive function $\varkappa(t)$ and a constant K such that $\varkappa(t) \sum_{i=1}^{n} \alpha_i^2 \geq \sum_{k,l=1}^{n} a_{kl}(t)\alpha_k\alpha_l$; $\int_0^t \varkappa(\tau)d\tau - \int_0^t \gamma(\tau)d\tau \leq K$; 2.) $\int_0^t \gamma(\tau)d\tau \to +\infty$ for $t \to +\infty$; 3.) $\sum_{i=1}^{n} B_i^2(t) \Big/ \int_0^t \gamma(\tau)d\tau \to 0$ for $t \to +\infty$; 4.) $\lim_{t\to+\infty} G(t) = c$; 5.) $\varphi(\bar{x})$ bounded, $M(\varphi) = 1$, then the conclusion of theorem 1. holds as well.

Card 3/5

Stabilisation of the solution . . .

Theorem 3: If 1.) $\lim_{t \to + \infty} G(t) = c$; 2.) $\lim_{|x| \to + \infty} \varphi(\bar{x}) = 1$; 3.) there exists at least one k, k = 1,2,..., n such that

$$\lim_{t \to + \infty} \left| \frac{B_k(t)}{\sqrt{Sp\ A}} \right| = + \infty$$

then the conclusion of theorem 1 holds too.

Theorem 4: If 1.) $\lim_{t \to + \infty} G(t) = c$; 2.) $\int_0^t \gamma(\tau)\, d\tau \to + \infty$ for $t \to + \infty$; 3.) there exist constants K and 1 such that for the bounded $\varphi(\bar{x})$

$$\left| \int_0^{x_1} \dots \int_0^{x_n} \left[\varphi(\bar{\xi}) - 1 \right] d\xi \right| \leq K \quad \text{for all } \bar{x}$$

Card 4/5

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Stabilisation of the solution . . .

then the conclusion of theorem 1 holds as well.

There are 3 Soviet-bloc references.

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4

Card 5/5

GOLAND, N.I., kand.tekhn.nauk; METELKINA, Ye.M., tekhnolog; DROZHINOVA, L.Ya., mladshiy nauchnyy sotrudnik

Control of dye bathes in fur dyeing with vat dyes. Nauch.issl.trudy NIIMP no.11:13-28 '62. (MIRA 16:5)
(Fur--Dressing and dyeing)

DROZICHINA, Docent E.A. Jul 52

USSR/Medicine - Vitamin B_1 Polyneuritis

"The Role of Vitamin B_1 in the Development of Polyneuritis and Its Treatment," Docent E. A. Drozichina, Clinic of the Inst of Labor Hygiene and Occupational Diseases, Acad Med Sci USSR

Zhur Nevropat i Psikh, Vol 52, No 7, pp 43-45

Studied vitamin B_1 role in toxic polyneuritis and myelopolyneuritis. A group of patients were given intravenous injections of 30-50 mg of thiaminchloride in courses of 20-30 injections. Compared this group with one which received only physiotherapy. In all patients undergoing vitamin therapy, especially those receiving physiotherapy in addition, interrupted functions were restored much more rapidly than in the control group. Only in cases where polyneuritic symptoms were combined with spinal disorders (spastic symptoms), which often acquired presistent character, was there no improvement. Vitamin B_1 also lessened the severity of the symptoms and shortened the period of sensitivity. Believes the processes of toxic polyneuritis are accompanied in the majority of cases by a disruption of vitamin B_1 metabolism. Symptoms of hypovitaminosis present in the advanced stages of the polyneurotic syndrome may retard the processes of regeneration in the nervous system.

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